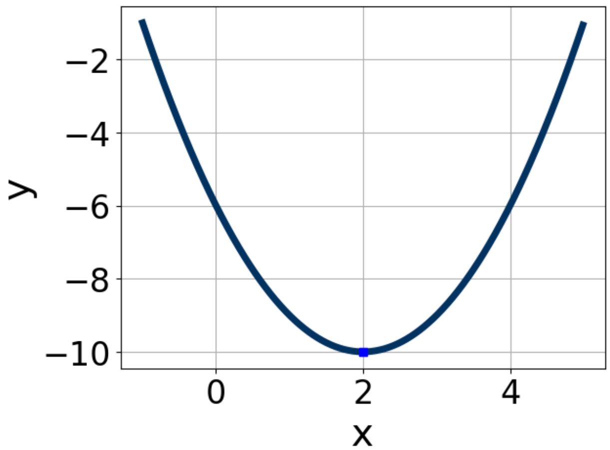
1. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



   A. $a \in [-4, 0], \quad b \in [0, 7], \text{ and } \quad c \in [-15, -12]$

   B. $a \in [0, 2], \quad b \in [-4, -2], \text{ and } \quad c \in [-8, -4]$

   C. $a \in [0, 2], \quad b \in [0, 7], \text{ and } \quad c \in [14, 17]$

   D. $a \in [-4, 0], \quad b \in [-4, -2], \text{ and } \quad c \in [-15, -12]$

   E. $a \in [0, 2], \quad b \in [0, 7], \text{ and } \quad c \in [-8, -4]$

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2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 + 38x + 15$$

   A. $a \in [-1.31, 1.93], \quad b \in [13, 22], \quad c \in [-0.16, 1.34], \text{ and } \quad d \in [19, 24]$

   B. $a \in [3.29, 4.95], \quad b \in [-3, 6], \quad c \in [5.47, 7.45], \text{ and } \quad d \in [4, 12]$

   C. $a \in [6.96, 9.03], \quad b \in [-3, 6], \quad c \in [2.25, 4.92], \text{ and } \quad d \in [4, 12]$

   D. $a \in [1.81, 2.88], \quad b \in [-3, 6], \quad c \in [10.17, 12.99], \text{ and } \quad d \in [4, 12]$

   E. None of the above.

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3. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-1.77, -0.84]$ and $x_2 \in [-1.32, -1.11]$

B. $x_1 \in [-2.5, -2]$ and $x_2 \in [-0.68, -0.61]$

C. $x_1 \in [-6.32, -5.86]$ and $x_2 \in [-0.46, -0.16]$

D. $x_1 \in [-20.14, -19.4]$ and $x_2 \in [-18.02, -17.99]$

E. $x_1 \in [-2.75, -2.44]$ and $x_2 \in [-0.62, -0.44]$

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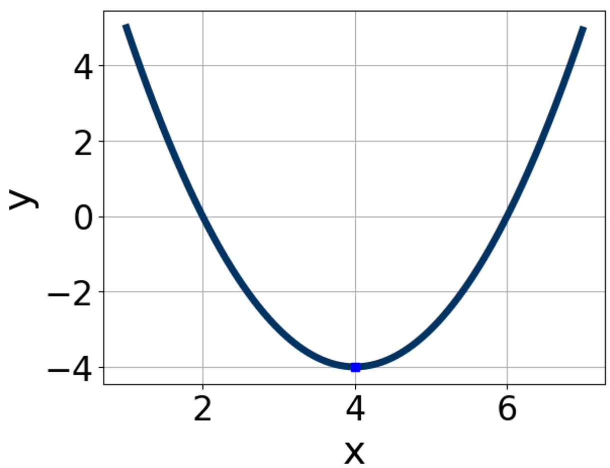
4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that $a, b,$ and c belong to.



A. $a \in [0, 2], \quad b \in [8, 9], \text{ and } \quad c \in [12, 15]$

B. $a \in [0, 2], \quad b \in [-12, -5], \text{ and } \quad c \in [12, 15]$

C. $a \in [-2, 0], \quad b \in [-12, -5], \text{ and } \quad c \in [-22, -18]$

D. $a \in [0, 2], \quad b \in [8, 9], \text{ and } \quad c \in [20, 22]$

E. $a \in [-2, 0], \quad b \in [8, 9], \text{ and } \quad c \in [-22, -18]$

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5. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$20x^2 - 7x - 2 = 0$$

A. $x_1 \in [-0.96, -0.33]$ and $x_2 \in [0, 0.5]$

B. $x_1 \in [-0.37, -0.04]$ and $x_2 \in [0.2, 1.1]$

C. $x_1 \in [-3.87, -3.4]$ and $x_2 \in [8.8, 11.1]$

D. $x_1 \in [-14.29, -14.01]$ and $x_2 \in [12.9, 15.8]$

E. There are no Real solutions.

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6. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [11.1, 12.9], \quad b \in [-7, -4], \quad c \in [1.5, 3.3], \text{ and } \quad d \in [-7, -3]$

B. $a \in [-1.7, 2.2], \quad b \in [-32, -26], \quad c \in [-1.2, 2.6], \text{ and } \quad d \in [-31, -27]$

C. $a \in [5.9, 7.2], \quad b \in [-7, -4], \quad c \in [5.4, 9.9], \text{ and } \quad d \in [-7, -3]$

D. $a \in [2.4, 4.1], \quad b \in [-7, -4], \quad c \in [11.9, 15.7], \text{ and } \quad d \in [-7, -3]$

E. None of the above.

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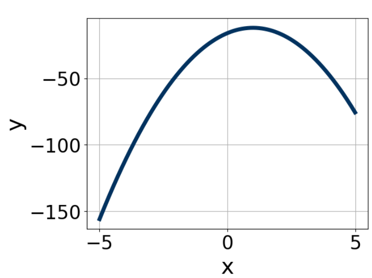
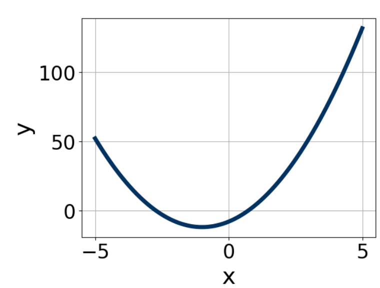
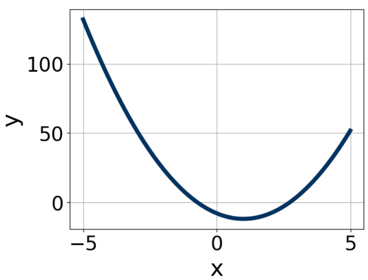
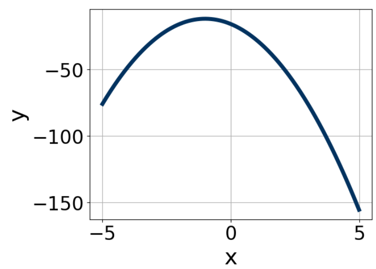
7. Graph the equation below.

$$f(x) = -(x + 1)^2 - 12$$

A. 

B. 

C. 

D. 

E. None of the above.

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8. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$14x^2 - 11x - 7 = 0$$

A. $x_1 \in [-2.5, -0.9]$ and $x_2 \in [-1.1, 0.9]$

B. $x_1 \in [-5.9, -4.1]$ and $x_2 \in [15.9, 17.2]$

C. $x_1 \in [-22.7, -21.6]$ and $x_2 \in [22.9, 25.3]$

D. $x_1 \in [-1.2, 1.4]$ and $x_2 \in [1, 2.7]$

E. There are no Real solutions.

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9. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 - 2x - 24 = 0$$

A. $x_1 \in [-6.19, -5.18]$ and $x_2 \in [0.25, 0.47]$

B. $x_1 \in [-0.78, -0.32]$ and $x_2 \in [2.24, 2.79]$

C. $x_1 \in [-1.35, -0.62]$ and $x_2 \in [0.91, 1.51]$

D. $x_1 \in [-2.54, -2.24]$ and $x_2 \in [0.48, 0.82]$

E. $x_1 \in [-18.5, -17.74]$ and $x_2 \in [19.91, 20.15]$

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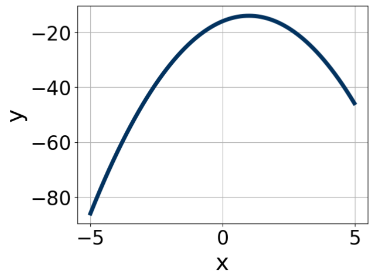
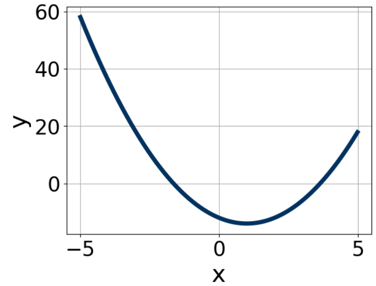
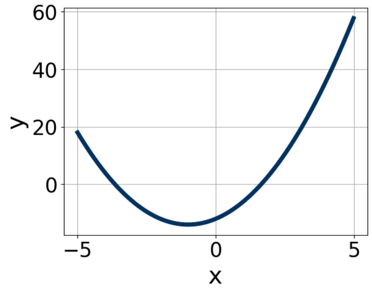
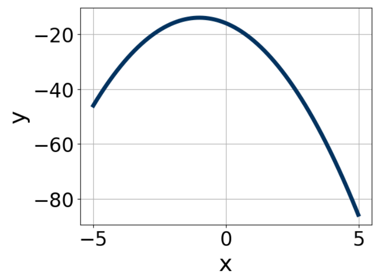
10. Graph the equation below.

$$f(x) = -(x+1)^2 - 14$$

A. 

C. 

B. 

D. 

E. None of the above.